

Applicants : Per Stobbe and Udo Hack
For : POROUS CERAMIC BODY AND
METHOD FOR ITS PRODUCTION
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In the Specification:

Applicants wish to amend the specification as follows:

Please insert the following heading before the first paragraph on page 1, as follows:

BACKGROUND OF THE INVENTION

The present invention concerns a method for the production of a porous ceramic body, especially a filter membrane and a porous ceramic body and its use in a filter, especially in a so-called cross-flow filter.

Please insert the following heading on page 4, before the second full paragraph as follows:

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to create a porous ceramic body, especially a filter membrane of SiC for use in cross-flow filtration, said ceramic body having good strength, good filter properties and good resistance to environmental influences. In addition, production of such a porous ceramic body is to be simple and efficient and said ceramic body is to have a long service life combined with maximum possible filter performance.

Please insert the following new paragraph after the last full paragraph on page 5, as follows:

According to one aspect of the method, for a first layer, the grain sizes of the first ceramic powder are in the range 6.5 μm (FEPA 800) to 23 μm (FEPA 360), for a second layer in the range 1.5 μm (JIS 7000) to 6.5 μm (FEPA F800) and for a third layer in the range 0.5 μm (JIS 10000) to 2 μm (JIS 6000), with preferably JIS 6000 being used as the second ceramic powder for the first layer, JIS 9000 for the second layer, and JIS 20000 for the third layer, or in each case equivalent grain bands.

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Please replace the last paragraph on page 6 extending onto page 7 with the following amended paragraph:

Further advantages, characteristics and features of the present invention will become apparent ~~clear~~ from the following ~~detailed description of embodiments~~ specification in conjunction with the drawings. ~~The enclosed diagrams and photographs show in~~

Please insert the following heading on page 7, before the first full paragraph, and replace the first full paragraph with the following amended paragraph:

BRIEF DESCRIPTION OF THE DRAWINGS

Fig 1. ~~Illustrates A diagram in which the flow is plotted against the pressure (TMP) for~~ Illustrates membranes produced in accordance with the present invention compared with conventional membranes;

Please replace the second full paragraph on page 7 with the following amended paragraph and insert the following two new paragraphs:

Fig 2. ~~a. to c. three diagrams,~~ Illustrates the outstanding chemical resistance of approximately 45-mm-long filter sections following conditioning in 2% HCl, ~~5% HNO₃ and 10% NaOH~~ at 97 °C;

Fig 2b. Illustrates the outstanding chemical resistance of approximately 45-mm-long filter sections following conditioning in 5% HNO₃ at 97 °C;

Fig. 2c. Illustrates the outstanding chemical resistance of approximately 45-mm-long filter sections following conditioning in 10% NaOH at 97 °C;

Please replace the third, fourth, fifth, sixth, and seventh full paragraphs on page 7 with the following amended paragraphs:

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Fig 3. Illustrates ~~Shows~~ a polished section of a two-layer SiC membrane in the corner of a quadratic channel of a conventional SiC carrier with a mean grain size of approximately 9 μm (F600) in the first layer and approximately 3 μm (F1200) in the second layer at 240-fold magnification;

Fig 4. Illustrates ~~Shows~~ a polished section also of a two-layer SiC membrane from the center of a quadratic channel of an SiC carrier with the same first layer as in Fig 2 and approximately 2 μm (JIS 6000) in the second layer at 240-fold magnification;

Fig 5. Illustrates a scanning electron micrograph of an SiC membrane on an SiC carrier in accordance with the invention;

Fig 6. Illustrates a polished section of a two-layer SiC membrane with underfiring with undesirable residues of second grain in the structure; and

Fig 7. Illustrates a polished section of a two-layer SiC membrane with overfiring of the second layer, characterized by undesirable large pores and giant grain growth through concretion of several SiC grains.

Please insert the following heading on page 7 before paragraph 8, as follows:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

In accordance with the method of the invention, RSiC carriers based on the coarse grain of an SiC fraction F240 in accordance with DIN ISO S466-2 of 25 mm diameter and 302 mm length were produced by extrusion and subsequent heat treatment at elevated temperatures. On this RSIC carrier was deposited the first membrane layer of a slurry that consists of 30% SiC grains (75% F600 and 25% JIS 9000), 5% of a 10% polyvinyl alcohol solution as a temporary binder for the green body and 65% water.